



Superfund At Work

Hazardous Waste Cleanup Efforts Nationwide

Rogue Valley/ Ditch Creek Ranch Site Profile

Site Description: The western edge of a 425-acre ranch in Wimer, Oregon

Site Size: 350 acres

Primary Contaminants:
Heavy metals, including cyanide, lead, copper, and chromium

Potential Range of Health Risks:
Drinking contaminated water could have caused central nervous system disorders and an increased risk of cancer

Nearby Population Affected:
Approximately 550 people

Ecological Concerns: Potential poisoning of plants near Ditch Creek and wildlife such as caribou, deer, and migrating birds

EPA Region: 10

State: Oregon

Congressional District: 2

Success In **Brief**

Criminal Suit for Environmental Pollution Settled Against Ranch Owner

In 1988, a company president used his own ranch near Wimer, Oregon to illegally dump industrial wastes generated at his electroplating facility in a nearby town. The contamination spread over 18 acres of the Ditch Creek Ranch, endangering local water supplies and wildlife. Through the efforts of the U.S. Environmental Protection Agency (EPA), with assistance from the Federal Bureau of Investigation (FBI), Rogue Valley Circuits, Inc. was brought to justice and fined \$1 million. This case was the largest criminal action ever taken in the State of Oregon for environmental pollution. Highlights of EPA's activities at the site included:

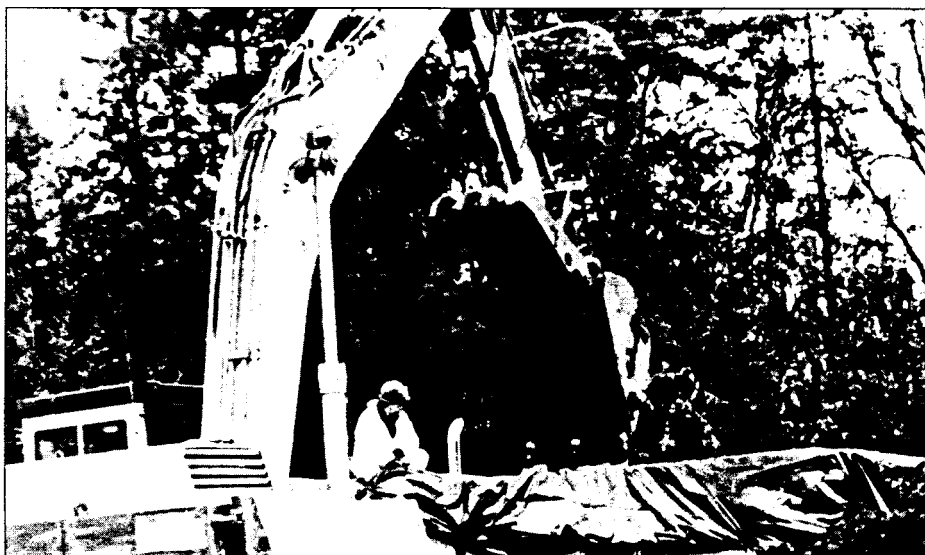
- Supervising the removal of highly contaminated waste from the ranch;
- Taking immediate actions to protect local drinking water; and
- Responding fully to community concerns during the cleanup.

Efforts by the ranch owner were completed in just three months, and ground water was monitored for two years. The Superfund

program takes such actions to enforce private party cleanup under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

The Site Today

Hazardous wastes have been removed from the Ditch Creek Ranch and transported to licensed disposal facilities. Ground water currently tests clean under federal safety standards. No reports of serious health effects have been reported from area residents.



Cleanup workers excavated soil and debris from the Ditch Creek Ranch, safeguarding drinking water supplies.

A Site Snapshot

The Ditch Creek Ranch site is located approximately three miles north of the town of Wimer in Jackson County, Oregon. The ranch includes some 400 acres of pasture and forested areas with a wide variety of plant and animal life. Land in the surrounding area is used primarily for cattle grazing, small produce farms and orchards, and private residences. Local wildlife includes caribou, deer, and migrating birds. The population of Wimer is 200, and approximately 350 people live in the surrounding area.

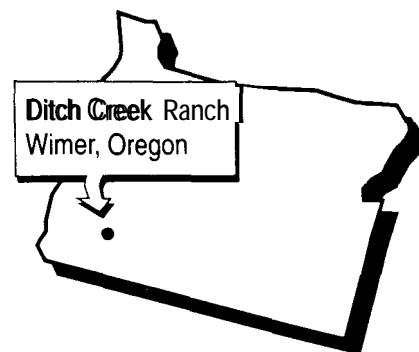
The former dump site is located on a 350-acre portion of the ranch owned by the president of Rogue Valley Circuits, Inc. Industrial wastes from the company's electroplating processing facility were brought

over from the nearby town of Medford. Prior to charges of illegal dumping at his ranch, the company president had been fined by Medford officials for repeatedly violating federal water discharge standards for copper.

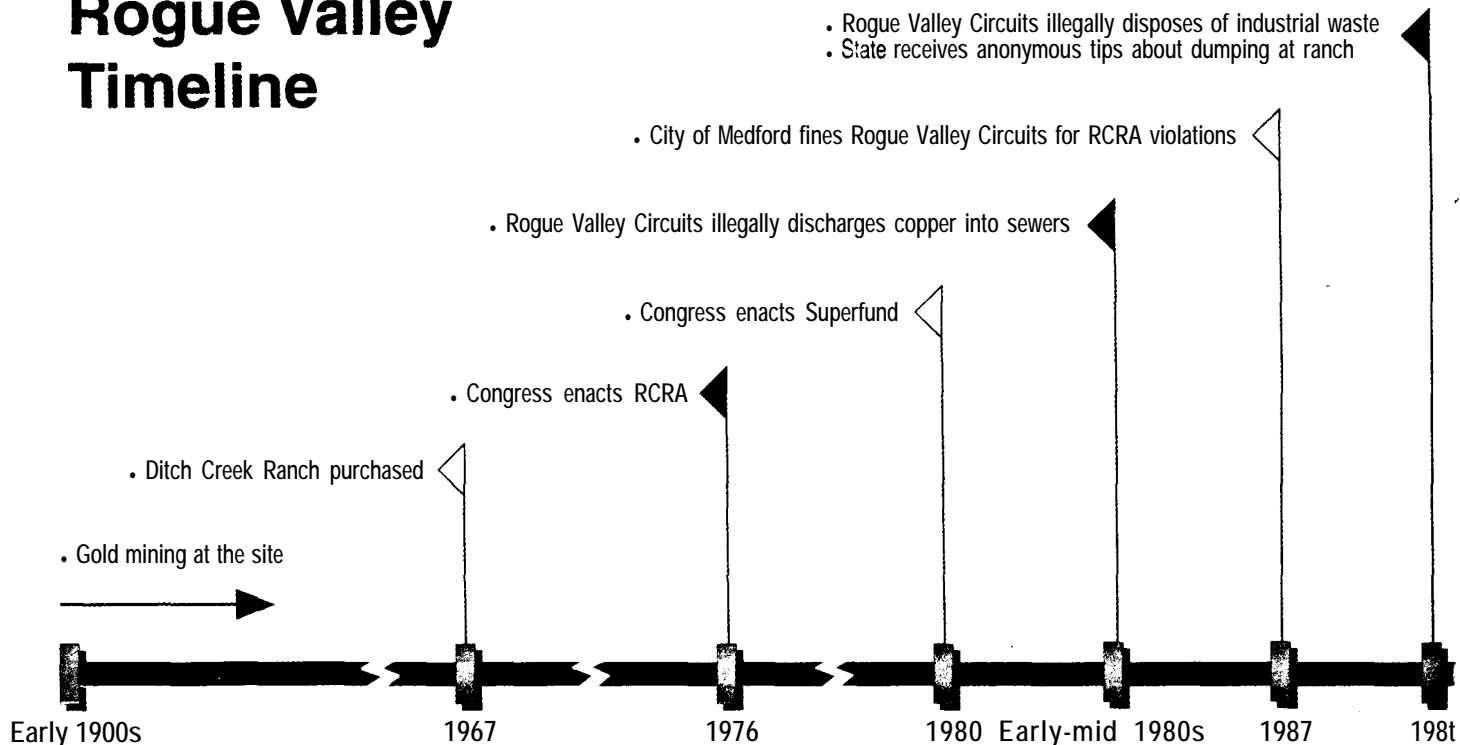
At the Ditch Creek Ranch, an old gold mining pit located along the property's western boundary was used for almost 20 years for ranch and household garbage disposal. In the spring of 1988, the contents of approximately fifty 55-gallon drums containing electroplating production waste from the Medford facility were illegally dumped at the site.

Contaminants identified in soil, sludge, and ground water samples included corrosive chemicals and heavy metals such as cyanide, copper, lead, chromium, cadmium, nickel, zinc,

mercury, and silver. Chronic exposure to these contaminants may result in serious health problems, such as cancer and central nervous system disorders. In addition, heavy metals pass untreated through municipal sewage treatment systems and into the environment, where they accumulate in the food chain. At Ditch Creek Ranch, however, tests showed that these heavy metals were confined to an area of approximately 10,000 square feet and had not yet migrated to an underground aquifer.



Rogue Valley Timeline



Anonymous Tips Lead to Criminal Investigation

A Pattern of Corporate Negligence

Rogue Valley Circuits, Inc. is one of a few electronic circuit board companies in southern Oregon that produces communications equipment for the U.S. Department of Defense. Following several years of increased production in the early 1980s, the company started discharging chemical wastes to a publicly owned water treatment facility.

Under the Resource Conservation and Recovery Act of 1976 (RCRA), companies are required to obtain permits before discharging or transporting hazardous wastes. By 1987, the City of Medford had fined Rogue Valley Circuits numerous times for unreported transportation and

disposal of hazardous wastes, a RCRA violation.

In 1988, the Ditch Creek Ranch first gained EPA's attention through the State of Oregon's Department of Environmental Quality, which had received anonymous tips of illegal dumping at the ranch.

In June and July of that year, Rogue Valley Circuits had illegally transported hazardous waste materials from the Medford facility to the company president's private residence. These wastes were dumped into a ravine located 400 feet from a creek draining into the Rogue River. Portions of the site drained directly into a local drinking water aquifer.

EPA Begins Investigations and Orders Cleanup

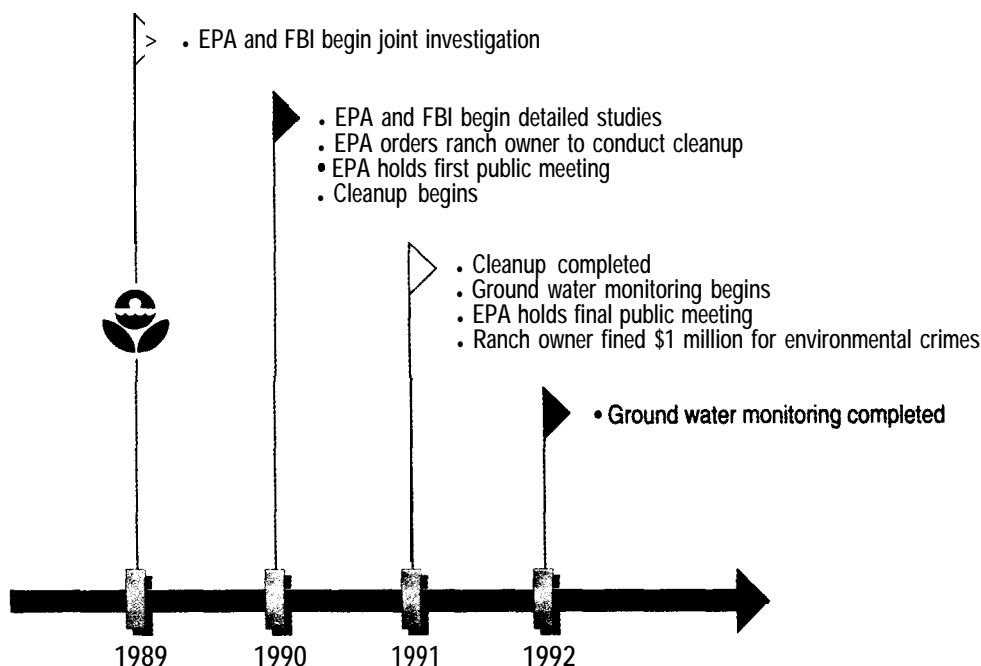
In 1989, EPA and the Federal Bureau of Investigation (FBI) launched a joint investigation of the alleged dumping. In April 1990, equipped with a search warrant and a backhoe and accompanied by FBI agents, EPA began a detailed study of the nature and extent of contamination at the Ditch Creek Ranch.

EPA's extensive site investigation included examinations of surface geology, as well as sampling of 16 domestic wells, the soil, and surface water. Some of the technologies used to investigate the site included electromagnetic detection, ground-penetrating radar, x-ray fluorescence, and aerial photos (see page 6).

The tests ruled out the possibility of ground water contamination, but did reveal high concentrations of copper, lead, cyanide, chromium, cadmium, nickel, zinc, mercury and silver in the soil. These contaminants were found in dangerous concentrations and, given their potential for spreading to the water supply, EPA concluded that the site posed an imminent threat. Therefore, the Agency quickly ordered an emergency cleanup of the site.

Immediate Actions Make Listing Unnecessary

Under the Superfund program, environmental hazards may be addressed in various ways. Manageable quantities of waste can be reduced through containment or removal. Often, these actions eliminate the contamina-



tion before extensive environmental damage occurs. In such cases, no further cleanup actions are usually required. Under CERCLA authority, EPA conducts removal operations that take no more than 12 months to complete and cost less than \$2 million.

If the extent of contamination is so great that even a series of quick actions will not reduce the risk of exposure, EPA will carry out a comprehensive cleanup. In this case, the site must be scored and listed on the National Priorities List (NPL), the nation's roster of uncontrolled or abandoned hazardous waste sites that qualify for federal funding. In the case of Ditch Creek Ranch, EPA's early actions precluded the need for listing on the NPL.

Besides protecting the environment, Superfund deters future pollution

Another goal of the Superfund program is to compel those responsible for contaminating the sites to undertake prescribed cleanup actions. In October 1990, EPA issued an administrative order on consent to the ranch owner, requiring him to perform the emergency cleanup, valued at approximately \$500,000. The order required stabilizing and removing the sources of contamination, and monitoring ground water.

Emergency Cleanup Stabilizes Site

Cleanup of the ranch began under EPA direction in November 1990. Private cleanup crews

hired by the ranch owner excavated soil and solidified it with cement. Next, they sorted and removed 700 cubic yards and 20 drums of debris from the site. In total, 40 truckloads of soil and debris were taken to a federally approved hazardous waste landfill located off site. All drums, scrap wood and tree roots saturated with contaminated sludge were transported off site and incinerated. More than 1,500 gallons of wastewater generated during the removal were transported to a licensed off-site disposal facility. The cleanup crew then covered the former dump area with hay and planted native vegetation and conifer saplings to prevent erosion. These emergency actions were completed in mid-January 1991.

The quick and thorough cleanup of the site took only three months to complete. Because portions of the site drain into a drinking water aquifer, local residents requested that EPA continue monitoring ground water to ensure future protection. EPA agreed to do so for two years after the cleanup was completed. Two years later, the ground water tested clean by federal safety standards.

As the last truck left the site, the EPA On-Scene Coordinator exclaimed, "The Ditch Creek Ranch is now as clean as a whistle."

The quick and thorough cleanup of the site took only three months to complete

Polluter Fined \$1 Million: Oregon's Largest Criminal Suit

On May 28, 1991, Rogue Valley Circuits, Inc. was found guilty in U.S. District Court of illegally transporting and disposing of hazardous wastes at Ditch Creek Ranch. The court imposed a \$1 million fine, the largest environmental criminal penalty ever assessed in Oregon. The court, however, allowed the corporation to deduct the cleanup costs from the overall fine. The court also ordered Rogue Valley Circuits, Inc. to serve five years' probation and pay for any additional cleanup costs incurred, including the two-year ground water monitoring program.

The thoroughness and speed of the removal operations contributed to making the site a model of Superfund success. In addition to protecting the environment, EPA enforcement actions ensured the private party cleanup of illegal hazardous waste disposal.



EPA Assures Concerned Residents

EPA's First Public Meeting Draws Fire

The Wimer community was worried about the possibility of contaminated ground water, and attendance at the first public meeting EPA held in October 1990 was nearly double the size of the town itself. Three hundred residents from Wimer, Medford, and surrounding areas crowded into the town hall to voice their concerns and to hear more about the contamination discovered at Ditch Creek Ranch.

At this emotional and sometimes hostile public meeting, residents expressed concern that area streams, ground water, and drinking water might become polluted. EPA's On-Scene Coordinator explained that the ranch owner had agreed to conduct the cleanup under EPA supervision, and would begin removing the hazardous waste long before contamination could spread.

Three hundred local residents crowded into a town hall to voice their concerns

The people of Wimer initially were skeptical, wanting to know the full extent of the threat to their homes and businesses. As the cleanup progressed, residents grew to appreciate EPA's technical expertise in supervising the removal. EPA representatives soon became allies of the community and were welcomed into Wimer homes. A slide show at



On-Scene Coordinator Thor Cutler (foreground, with back to camera), discusses EPA's proposed plans with Wimer residents. In three months, EPA's handling of the Ditch Creek Ranch cleanup turned local skepticism into support.

the last meeting in January 1991 described in detail all that had been done at the site, and addressed remaining concerns. According to the On-Scene Coordinator, "The community described what they wanted, and we delivered on the coin."

Effective Community Relations Key to EPA Success

News that ground water was not contaminated spread quickly, and only 40 residents attended EPA's last public meeting held after the cleanup was completed. The atmosphere was very positive, a marked change from the anger and mistrust that pervaded the first meeting. EPA's On-Scene Coordinator observed that the site's successful cleanup was due in large part to the community's attention and cooperation.

"We. ..are very impressed with the way EPA has conducted itself both in... community relations and... the physical cleanup work." -- Wimer Resident

Community members were pleased with the speed and efficiency of the cleanup. A local newspaper ran an article in March 1991 entitled, "Three Cheers for EPA" in which one resident, noting initial skepticism about the Agency, acknowledged, "We have to admit that we are very impressed with the way EPA has conducted itself, both in the matter of community relations and in accomplishing the physical cleanup work. They have been extremely cautious and extremely thorough."

Creative Technology Applications

Imagine digging 2,000 large holes 18 feet deep throughout 350 acres, just to check the soil for metal. That's what EPA's Thor Cutler and his cleanup crew would have had to do if it weren't for good old American ingenuity—using an old technology for a new purpose. The Electro-Magnetometer was originally developed by Allied Forces during World War II to locate enemy submarines, and later to locate ore deposits.

This instrument screens large areas for buried substances and debris by identifying magnetic field variations. Detected metals change the field, allowing investigators to pinpoint the metal and determine its shape, quantity and size. The device measures to a depth of 20 feet, easily sweeping large areas. At the Ditch Creek Ranch, Cutler knew drums and toxic debris were buried on the

site, but where? The Electro-Magnetometer enabled investigators to scan the entire site and quickly locate hazardous waste and drums in two areas.

That problem aside, Cutler next had to investigate reported dumpings underneath an area where a new barn was under construction. This would have involved demolishing the building and excavating the site, marring the land and creating a great deal of dust. Ground-penetrating radar, originally used by the oil industry, was used instead: this device uses sonar to examine soil underneath buildings. The use of radar allowed Cutler to “see” whether underground contamination existed.

In addition, x-ray fluorescence was used to measure for lead and copper levels in the soil, providing an instant screening of the

Success at Rogue Valley

In three short months, hazardous wastes were removed from the Ditch Creek Ranch. The polluter was ordered to conduct the cleanup under EPA supervision, and paid a \$1 million fine for the illegal disposal. The Oregon case is just one example of how Superfund works not only to clean up hazardous sites, but to encourage proper disposal from the start.

bottom of the ravine. It allowed workers to make sure they had removed even trace metals from previously contaminated areas.

These technologies may be old, but at the Ditch Creek Ranch site, the Superfund program put them to new, creative uses.

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